

of sugar and other carbohydrates that are kept in an amorphous or glassy condition. This form can be considered a solid syrup of sugars generally having from about 0.5 to about 1.5% moisture. Such materials normally contain up to about 92% corn syrup, up to about 70% sugar and from 0.1% to about 5.0% water. The syrup component generally is prepared from corn syrups high in dextrose, but may include other materials. Further active ingredients such as flavoring, sweeteners, vitamins, minerals, and the like may also be added in accordance with the present invention.

Boiled candy lozenges may also be prepared from nonfermentable sugars such as sorbitol, mannitol, and hydrogenated corn syrup. A typical hydrogenated corn syrup is lycasin. The candy lozenges may contain up to about 95 % sorbitol, a mixture of sorbitol and mannitol at a ratio of about 9.5 to 0.5 up to about 7.5 to 2.5 and hydrogenated corn syrup up to about 55% of the syrup component.

Soft confectionery items include nougat, chewy candy and the like. These materials contain two primary components, namely a high boiling syrup such as corn syrup or the like, and a relatively light texture frappe, generally prepared from gelatin, egg albumen, milk proteins such as casein, and vegetable proteins such as soy protein, and the like. The frappe is generally relatively light, and may, for example, range in density from about 0.5 to about 0.7 g/cc.

The procedure to make soft confectionery items generally involves the formation of a boiled sugar-corn syrup blend to which is added a frappe mixture. The boiled sugar-corn syrup blend may be prepared from sugar and corn syrup blended in parts by weight ratio of about 90 to 10 to about 10 to 90. This blend is heated to temperatures above 121°C to remove water and to form a molten mass. The frappe is generally prepared from gelatin,

egg albumen, milk proteins such as casein, and vegetable proteins such as soy protein, and the like which are added to a gelatin solution and rapidly mixed at ambient temperature to form an aerated sponge-like mass. The frappe is then added to the molten candy base and mixed until homogenous at temperatures between 65°C and 121°C.

The encapsulated product of the present invention can then be added as the temperature of the mixture is lowered to about 65-93°C, whereupon additional ingredients may be further added. The soft confectionery formulation is then cooled and formed to pieces of desired dimensions.

As is stated above, the inventive subject matter also includes the incorporation of the encapsulated product into a chewing gum product. As used herein, the term chewing gum means a product containing a chewing gum formulation. In general, the chewing gum formulation will comprise from about 5 to about 99% and preferably 20 to about 95% by weight of the enhanced chewing gum product.

With regard to a chewing gum formulation, such formulations will contain a gum base and various additives, such as sweeteners and flavors which may be supplied by the encapsulated product of the present invention. The gum base employed will vary greatly depending on various factors such as the type of base used, consistency desired and other components to make the final product. In general, amounts of about 5% to about 45% by weight of the final chewing gum composition are acceptable for use in chewing gum compositions with preferred amounts of about 15% to about 25% by weight. The gum base may be any water-soluble gum base well known in the art. Illustrative examples of suitable polymers in gum bases include both natural and synthetic elastomers and rubbers. For example, those polymers

which are suitable in gum bases, include, without limitation, substances of vegetable origin such as chicle, jelutong, gutta percha and crown gum. Synthetic elastomers such as butadiene-styrene copolymers, isobutylene-isoprene copolymers, polyethylene, polyisobutylene and polyvinylacetate and mixtures thereof, are particularly useful.

The gum base component may contain elastomer solvents to aid in softening the elastomer component. Such elastomer solvents may comprise methyl, glycerol and pentaerythritol esters of rosins or modified rosins, such as hydrogenated, dimerized or polymerized rosins or mixtures thereof. Examples of elastomer solvents suitable for use herein include the pentaerythritol ester of partially hydrogenated wood rosin, pentaerythritol ester of wood rosin, glycerol ester of polymerized rosin, glycerol ester of tall oil rosin, glycerol ester of wood rosin and partially hydrogenated wood rosin and partially hydrogenated methyl ester of rosin, such as polymers of alpha-pinene and beta-pinene; terpene resins including polyterpene and mixtures thereof. The solvent may be employed in an amount ranging from about 10% to about 75% and preferably about 45% to about 70% by weight to the gum base.

A variety of traditional ingredients such as plasticizers or softeners such as lanolin, stearic acid, sodium stearate, potassium stearate, glyceryl triacetate, glycerine and the like as well as natural and synthetic waxes, petroleum waxes, such as polyurethane waxes, paraffin waxes and microcrystalline waxes may also be incorporated into the gum base to obtain a variety of desirable textures and consistency properties. These individual additional materials are generally employed in amounts of up to about 30% by weight and preferably in amounts from about 3% to about 20% by weight of the final gum